APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,164	08/29/2001	Christian Huitema	209196	6841

23460	7590	01/14/2005

LEYDIG VOIT & MAYER, LTD
TWO PRUDENTIAL PLAZA, SUITE 4900
180 NORTH STETSON AVENUE
CHICAGO, IL 60601-6780

EXAMINER
NGUYEN, TRONG NHAN P

ART UNIT	PAPER NUMBER
2152	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>29 August 2001</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-6,8 and 11-19</u> is/are rejected.

7) ☒ Claim(s) <u>7,9 and 10</u> is/are objected to.

8) ☐ Claim(s) <u>20-25</u> are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>19 August 2001</u> is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/26/03</u>.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

Claims 1-25 are being examined.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I.   Group 1: Claims 1-19 are drawn to a method for a local computer sending a request to a remote computer for processing in 709, subclass 203.

II.   Group 2: Claims 20-23 are drawn to a method for caching data in a hierarchy in class 711, subclass 122.

III.   Group 3: Claims 24-25 are drawn to a method for computing a hash value and sending the resulting value to a remote node in class 709, subclass 206.

Inventions I, II, and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. Invention I has a separate utility such as in a system lacking for caching data in a hierarchy, and computing a hash value and sending the resulting value to a remote node. Invention II has a separate utility such as in a system lacking for a local computer sending a request to a remote computer for processing and computing a hash value and sending the resulting value to a remote node. Invention III has a separate utility such as in a system lacking for a local computer sending a request to a remote computer for processing and caching data in a hierarchy. See MPEP § 806.05(d).

These inventions are distinct for the reasons given above, and the search

required for each Group is different and not co-extensive for examination purpose. For

example, the searches for the two inventions would not be co-extensive because these

groups would require different searches on PTO's classification class and subclass as

following:

(a) Group I search (claims 1-19) would require use of search **Class 709,**

subclass 203.

(b) Group II search (claims 20-23) would require use of search **Class 711,**

subclass 122.

(c) Group III search (claims 24-25) would require use of search **Class 709,**

subclass 206.

A telephone call was conducted with Mr. David Lee, the applicant's

 representative, on December 29, 2004 to address the possibility of a restriction election.

The applicant selected group I with traverse.

Claims 20-25 are withdrawn from consideration.

Claims 1-19 are now presented for examination.

Drawings

The drawings (figs. 7 and 8) are objected to under 37 CFR 1.83(a) because they

fail to show the following as described in the specification:

- In Fig. 7, elements 204 & 214 were mentioned in the Spec but failed to show

  in the drawing.

Any structural detail that is essential for a proper understanding of the disclosed

invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing

sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because it is vague and full of technical phraseology. It does not clearly and concisely describe the claimed invention. Correction is required. See MPEP § 608.01(b).

Oath/Declaration

The Oath fails to claim priority to a Provisional Application. Correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 recite the limitation "...when one of the three conditions..." The claim

fails to disclose the conditions being verified. For the purpose of examination, Examiner

interprets one of the conditions to be any condition or criteria being compared against.

In addition, the claim further states, "...otherwise..." Per claim 1, Examiner interprets

"otherwise" to mean if none of the conditions is met, then perform the rest of the

function as stated thereafter. However, if one of the conditions is met, then the routine

stops before executing "...otherwise..." In addition, claim 1 further recites, "generating a

response...identifying address information of the first node as best..." Since the

request is for the address resolution of second node, Examiner interprets the response

is for the address of the second node not first node. Claims 2-4 are subjected to similar

interpretations.

Claim 6 recites "...else..." For the purpose of examination, Examiner interprets

"else" to be a conditional claim, "...if...then...else..."; i.e., the second part of the

limitation after the "else" is executed if the first part does not meet the conditions set

forth. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

Claims 1-2 and 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated

by Kanemaki et al, 6,081,845 (Kanemaki hereafter).

As per claim 1, Kanemaki teaches a serverless name resolution protocol through

which unique numbers (IP address) are resolved to (ATM) addresses (abstract),

comprising the steps of: receiving at a first node (ATM node, fig. 21a) a request

message from a requester node (terminal A, fig. 21a) seeking address resolution of a

second node (terminal B, fig. 21a) having a unique number identifier, the request

message including address information of the requester node (col. 1, lines 35-37 & 41-

43; node (or terminal) A establishes up a communication link with ATM node; node A

sends an address resolution request to ATM node for node B); populating a routing

table of the first node with the address information of the requester node; analyzing the

request message (col. 1, lines 43-47; ATM node searches its routing table for

corresponding ATM address of node B); generating a response message to the

requester node identifying address information of the first node as best matching for the

request message when one of three conditions is met (col. 1, lines 47-49; after finding

the corresponding ATM address of node B in the routing table, ATM node sends the

reply data to node A).

As per claim 2, Kanemaki teaches comparing the unique number identifier to the

address information of the second node (node B), and wherein the step of generating a

response message to the requester node identifying address information of the second

node as best matching for the request message when one of three conditions is met

comprises the step of generating a response message to the requester node identifying

address information of the second node as best matching for the request message

when the unique number identifier is identical to the address information of the first

node (col. 1, lines 43-49; see interpretation regarding claim 1 above).

As per claims 5-6, Kanemaki teaches the request message includes a certificate

of origin (userid and password), further comprising the steps of checking the certificate

of origin to determine its validity, and refusing the request message when the certificate

of origin is invalid; determining if the address information of the requester node is

already in the routing table (14, fig. 1, col. 5, lines 40-45; system receives and verifies

the user's request (containing IP address and password) in order to determine if the

user (or node) is authorized to make or receive the request); refreshing the address

information of the requester node if more recent than the address information of the

requester node already stored in the routing table (11, fig. 1, col. 5, lines 45-48; control

section updates routing and/or password tables).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3-4, 8, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanemaki in view of Applicant admitted prior art (Applicant hereafter).

As per claims 3-4, Kanemaki teaches generating a response message to the requester node identifying address information of the second node as best matching for the request message comprises the step of generating a response message to the requester node identifying address information of the second node as best matching for the request message as noted in claim 1 above. Kanemaki does not explicitly disclose the message containing maximum hop count value and list of node that have processed the request. However, in related art to the claimed invention, Applicant discloses a peer to peer network where a request is forwarded from one node to the next until the data is found; then each node in the path gets a copy of the requested data until the requested data reaches the requesting node; the list of nodes (or hops – including hop count value) associated to the requested data that processed the request is maintained and stored in the routing tables of the nodes (page 1, paragraph 0009). Hence, it would have been obvious to one of ordinary skill in the art to use the data in the routing table at each node to determine if the requested data has been processed by the node and find the shortest paths in retrieving the data. If the maximum hop count value is exceeded and no match has been found, the response message will indicate that the node no longer exists or is missing (or inoperable) from the network.

As per claim 8, Kanemaki does not explicitly disclose preparing a flooding message containing the address information of the first node with an empty list of

already flooded nodes, and sending the flooding message to the requester node.

However, multicasting (flooding message) a request to solicit responses from plurality of

nodes is widely used in the art (multicasting is similar to broadcasting; however,

multicasting is used to send a message to targeted recipients rather than all users in the

network). If a request is found at one of nodes that has been multicasted, the node will

send a response to the requester node. Hence, it would have been obvious to one of

ordinary skill in the art to multicast (flooding) a message to plurality of targeted nodes to

solicit responses from the nodes.

As per claim 7, Kanemaki does not explicitly disclose the selected level is a last

level having K entries stored therein, and wherein the step of determining the selected

level comprises the steps of determining that an entry should be replaced, and replacing

the entry with the address information of the requester node. However, as mentioned in

claims 3-4 above, Applicant discloses a peer to peer network where the request is

routed from node to node until the data is found at one of the nodes thus forming a

hierarchical level of nodes; the routing tables at the nodes store the entries (nodes) that

processed the request. If the data is found, the data is routed back to each of the nodes

that processed the request until the data reaches the requested node. The requested

node (as a peer in the system) also stores and maintains a routing table with all the

nodes that processed the request for future reference. The last node (requester node)

in the cycle forms the lowest level in the hierarchy. Thus, it would have been obvious to

one of ordinary skill in the art to update the routing table of the requester node with the

address entry of the requestor node as the last node in the routing table for the requested data.

As per claims 12-13, as previously noted in claims 3-4 above, each node stores and maintains a list of nodes associated with the requested data in its routing table for future reference. Kanemaki does not explicitly disclose finding a subset of routing table entries whose address is not already listed in the request message, returning an indication of failure when the subset is empty; and finding two entries whose identifiers are closest to the second node, randomly pick one of the two entries, and return the randomly picked entry. However, in related art to the claimed invention, Applicant discloses a peer to peer network where if no value is found in the routing table, the search will fail; the node will forward the request to the next node in its routing table that can further process the request. Applicant further discloses, in related art to the claimed invention, if more than one node is found, system will pick the node that is closest to the requestor (page 1, paragraph 0009). Hence, it would have been obvious to one of ordinary skill in the art to terminate the search if no data is found; and select the node closest to the requestor to obtain the requested data from to save cost and reduce the probability of system or network error.

Claim 14 is rejected for similar reasons as claims 1 and 3-4 above.

Claims 11 and 15-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Kanemaki in view of and Srbljic et al, 5,933,849 (Srbljic hereafter).

As per claim 11, Kanemaki does not teach checking a date of validity for address information in the routing table, and removing address information for which the date of validity has passed. In an analogous art to the claimed invention, Srbljic teaches a distributed caching system for searching and retrieving data objects (data objects can be of a plurality of items, including but not exhausting, documents, network addresses, data files, etc., stored at the nodes (cache servers). The caching system has a directory look-up table (performs similar function to routing table) that helps locate the network addresses of where the requested data object is being stored for retrieval (col. 5, lines 60-61; col. 5, lines 65 – col. 6, lines 5). Srbljic further teaches assigning an expiration date (time-to-live 'TTL') to each object (col. 3, lines 66 – col. 4, lines 3) and deleting the data objects (with the address information) when the data is out of date from where the data is stored (col. 14, lines 5-10). Hence, it would have been obvious to one of ordinary skill in the art to keep data in the routing table fresh by deleting expired, obsolete data.

As per claims 15-19, Kanemaki does not explicitly disclose forming the unique number identifier of the second node by computing a hash of a name of the second node; associating a unique number with the hash of the name to form the unique number identifier. In a related art to the claimed invention as noted above in claim 11, Sjbljic teaches using a hash function to compute the unique number identifier (network address) and associating the unique number to a node that stored the requested data object (col. 6, lines 1-5; col. 6, lines 66 – col. 7, lines 2). Hence, it would have been obvious to one of ordinary skill in the art to use a hash function to compute a unique

number and associate that number to a unique address of a node in the network as

disclosed by Sjbljic.

Allowable Subject Matter

Claims 9 and 10 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

- Heddaya et al, 6,205,481; Olson et al, 5,987,376 ; Slater et al, 6,654,796 ;

   Garcia-Luna-Aceves et al, 6,683,865 ; Borella et al, 6,269,099 ; Dutta et al,

   6,636,854 ; Alkhatib et al, 6,532,217

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jack P Nguyen whose telephone number is (571) 272-

3945. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

jpn

GLENTON B. BURGESS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100